Oak Leafroller

Defoliates red and white oaks

Name and Description—*Archips semiferana* (Walker) [Lepidoptera: Tortricidae]

The oak leafroller is a common defoliator of oaks. In the central Rocky Mountains, the oak leafroller defoliates gambel oak. Moths are a light olive brown and have a diagonal rusty band on the forewing (fig. 1). The wingspan is approximately 7/8 inch (22 mm) long. Mature larvae are approximately 4/5 inch (21 mm) long and are greenish yellow (figs. 2-3). Eggs are laid in a mass containing 15-125 eggs and are covered with tan scales from the female's abdomen.

Figure 1. Oak leafroller adult. *Photo: John Himmelman, http://booksandnature.homestead.com/moth133.html.*

Hosts—Gambel oak is the primary host in the Rocky Mountain Region, although ornamental plantings of various red and white oaks may be subject to infestation by the oak leafroller. Occasionally, the insect may be found on maples.

Life Cycle—The oak leafroller egg masses are deposited in the canopy of trees in July and August. A majority of the egg masses are deposited on and overwinter in the middle half of the bole and branches of the canopy, and more occur on the southern side of the tree. Larvae emerge from eggs in spring at about the time that buds are bursting. Larvae feed within the protective folds of young leaf clusters and later roll or fold one or more entire leaves or leaf parts (fig. 4). The larvae pass through five instars. Pupation takes place in the leaf roll in June to early July, and the adults appear in July.

Figure 2. Oak leafroller larva. *Image: Texas Agriculture Extension Service.*

Damage—The oak leafroller defoliates oaks and is of particular significance in the mid-continent oak woodlands, where red, scarlet, northern pin, white, and chestnut oaks have been defoliated. Outbreaks of this insect are infrequent in the Midwest and East and may last from 3-5 years. In the central Rocky Mountains, outbreaks of the oak leafroller are sporadic. Defoliation may lead to weakened trees that succumb to other factors such as late frosts or wood borers. First-instar larvae produce webbing within folds of the young leaf cluster; later instars will web together leaves or roll leaves to provide for shelter and food.

Figure 3. Oak leafroller larvae and damaged leaf. *Photo: Northern Research Station, USDA Forest Service.*

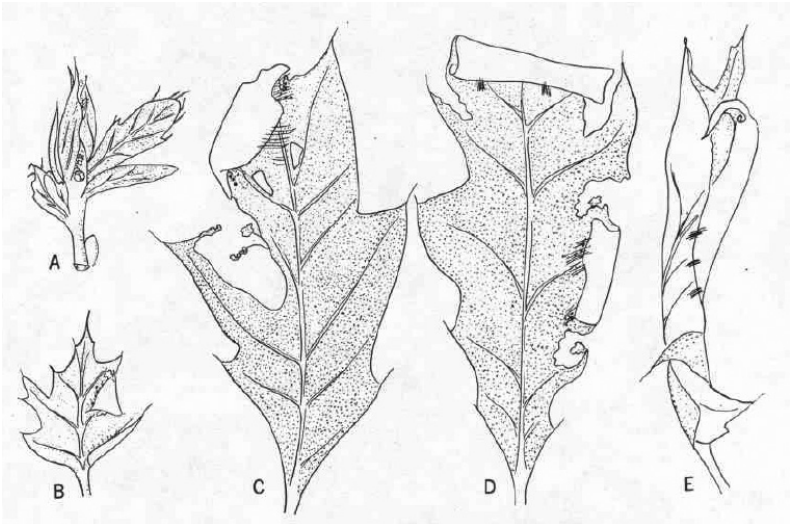

Figure 4. Rolled oak leaves (from Wilson 1972).

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Management—There is little information on the natural control agents of the oak leafroller, but natural enemies are thought to be important in preventing damaging populations. Mature larvae exhibit behavior typical of the members of its moth family, Tortricidae, when disturbed. They retreat rapidly, exit the shelter, and drop on a silken thread. To manage a local problem, horticultural oil is considered effective in controlling the overwintering egg stage of this insect. Applications should target the twigs where the egg masses are deposited.

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1. Wilson, L.F. 1972. Life history and outbreaks of an oak leafroller, *Archips semiferanus* (Lepidoptera: Tortricidae), in Michigan. Great Lakes Entomologist 55:71-77.